



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/756,711

01/13/2004

Jeffrey L. Milner

EJ-7563

2880

34769

7590

06/15/2007

NEW MARKET SERVICES CORPORATION
(FORMERLY ETHYL CORPORATION)
330 SOUTH 4TH STREET
RICHMOND, VA 23219

EXAMINER

LANG, AMY T

ART UNIT

PAPER NUMBER

3731

MAIL DATE

DELIVERY MODE

06/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/756,711

Applicant(s)

MILNER ET AL.

Examiner

Amy T. Lang

Art Unit

3731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5 and 7-13 is/are rejected.
- 7) ☐ Claim(s) 2-4 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 5/11/07.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.

All previous rejections and objections not included in this office action have been withdrawn in light of applicant's remarks filed 11/30/2006.

Response to Arguments

Applicant's arguments filed 11/30/2006 have been fully considered but they are not persuasive.

1. Specifically, applicant argues (A) that there is not motivation to combine the references of Perozzi and Walters since Perozzi refers to a crankcase composition and Walters refers to a hydraulic fluid.

With respect to argument (A), it is well known in the art to use a hydraulic fluid to lubricate a crankcase (see paragraph [0035] of US 2003/0121341 A1 to Hori et al). Furthermore, Perozzi discloses the addition of an antiwear agent and Walters teaches a specific antiwear agent that is advantageous to a lubricating composition. Therefore, it would have been obvious to one of ordinary skill at the time of the invention for Perozzi to utilize the antiwear agent of Walters.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, and 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Perozzi (US 5,498,355) in view of Walters (US 5,254,272).

Perozzi discloses a crankcase lubricating oil composition comprised of a hydrocarbyl dithiophosphate salt and a hydrocarbyl polysulfide (column 1, lines 6-10; column 2, lines 29-32; column 9, lines 38-41; column 16, lines 27-28). The hydrocarbyl portion is later disclosed as dihydrocarbyl since the formula of the hydrocarbyl dithiophosphate displays two hydrocarbyl moieties (column 9, lines 55-60). The polysulfide is further disclosed as dinonyl trisulfide (column 16, lines 19-21, 27-40). In light of the specification, which discloses on page 17 that di-t-nonyl polysulfide has a CCT value of 731 and that dinonyl trisulfide encompasses di-t-nonyl polysulfide, dinonyl

trisulfide would intrinsically also have the same CCT value and therefore a sulfur activity greater than 125 mg.

The base oil of the composition is a mineral oil with a suitable viscosity for lubricating a crankcase (column 19, lines 23-24). The kinematic viscosity of the lubricating composition, as measured during the L-38 test that determines characteristics of crankcase lubricants, is disclosed as 14.05 cSt at 100 degrees Celsius (column 24, lines 44-49; column 25, lines 1-15). Therefore, the base oil would also share this kinematic viscosity, since it is suitable for lubricating a crankcase.

Perozzi further discloses additional additives in the composition including corrosion inhibitors, rust inhibitors, antifoam agents, and dispersants (column 15, lines 16-19; column 16, lines 13-18; column 17, line 25). The dispersant is further disclosed as a boronated ashless Mannich base dispersant so that it would have also been obvious to utilize a succinimide dispersant (column 17, lines 25-36, 50-58).

Perozzi does not disclose the (i) lubricating oil for use as gear oil or (ii) the instantly claimed component D in the lubricating oil composition.

With respect to (i) above, the term "gear oil" is an intended use phrase and is given no patentable weight. The examiner's position is supported by case law, which holds that "where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention, the preamble is not a claim limitation." *Rowe v. Dror*, 112 F.3d 473, 478, 42 USPQ2d 1550, 1553 (Fed. Cir. 1997) and MPEP 2111.02.

With respect to (ii) above, Perozzi discloses the addition of one or more antiwear agents including amine salts of phosphorus acids (column 16, lines 19-25). Walters discloses a hydraulic fluid, which is utilized in a crankcase, comprised of a specific antiwear agent (column 1, lines 8-10, 41-45). The agent is further disclosed as a dihydrocarbyl thiophosphate amine salt, which clearly overlaps the instantly claimed component D (column 2, lines 19-31). This antiwear agent, when utilized from 0.1 to 1.5 wt% of the lubricating composition, is advantageous as a lubricating component since it is zinc free and still meets the requirements for a hydraulic fluid (column 3, lines 25-28; column 6, line 33 through column 7, line 5). Hydraulic fluids that contain zinc pollute the land when spillage occurs (column 1, lines 17-25). Therefore, since Perozzi discloses an antiwear agent as an amine salt of phosphorus acid and Walters discloses a specific amine salt of phosphorus acid antiwear agent that is advantageous by not contributing to pollution, it would have been obvious for Perozzi to utilize the antiwear agent disclosed by Walters.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perozzi (US 5,498,355) in view of Walters (US 5,254,272) and Minn (US 4,282,153).

Perozzi and Walters, as discussed in paragraph 4 and incorporated here by reference, disclose a gear oil lubricant comprised of a hydrocarbyl polysulfide, dihydrocarbyl dithiophosphate ester, and a dihydrocarbyl (mono)thiophosphate ester. Perozzi discloses the method for preparing the thiophosphate ester as any known suitable method (column 10, lines 42-43).

Perozzi does not specifically disclose the method of preparing the thiophosphate ester as the product of dicyclopentadiene and dialkyldithiophosphoric acid.

Minn discloses a method to produce a dihydrocarbyl dithiophosphate involving a reaction mixture of O,O-diethyl dithiophosphoric acid, a dialkyldithiophosphoric acid, and dicyclopentadiene (Example 3, column 3). The reaction produced bis(O,O-diethyl dithiophosphate), which is a dihydrocarbyl dithiophosphate. Since Minn discloses a successful method for producing a dihydrocarbyl dithiophosphate, it would have been obvious for Perozzi to also utilize this method, since the scope of Perozzi includes any suitable method.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Perozzi (US 5,498,355) in view of Walters (US 5,254,272) and Milner (US 6,133,207).

Perozzi and Walters, as discussed in paragraph 4 and incorporated here by reference, disclose a gear oil lubricant comprised of a hydrocarbyl polysulfide, dihydrocarbyl dithiophosphate ester, and a dihydrocarbyl (mono)thiophosphate ester.

The combination of Perozzi and Walters is silent as to whether the dihydrocarbyl (mono)thiophosphate amine salt is free of phosphites.

Milner teaches that the additive combination of hydrocarbyl polysulfides and dihydrocarbyl (mono)thiophosphate amine salts produces a strong odor (column 1, lines 40-55; column 2, lines 30-44; column 3, lines 16-20). The disclosed examples show that when phosphite was completely converted to the thiophosphate amine salt, no odor was generated (Inventive Example 2, column 4; Inventive Example 4, column 4 through

Art Unit: 3731

column 5). However, when the phosphite was not completely converted, a strong odor was generated (Comparative Example 1, column 4; Comparative Example 5, column 5). This strong odor invites many concerns from residential areas near manufacturing plants that might lead to the plant closing down by orders from the EPA (column 2, line 59 through column 3, line 9). Therefore, it would have been obvious for the combination of Perozzi and Walters to produce thiophosphate amine salts free of phosphites to eliminate the strong odor.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over over Perozzi (US 5,498,355) in view of Walters (US 5,254,272) and Walters (EP 0,744,456 A2).

Perozzi and Walters, as discussed in paragraph 4 and incorporated here by reference, disclose a gear oil lubricant comprised of a hydrocarbyl polysulfide, dihydrocarbyl dithiophosphate ester, and a dihydrocarbyl (mono)thiophosphate ester.

The combination of Perozzi and Walters is silent as to the production of the dihydrocarbyl (mono)thiophosphate ester.

Wlaters (EP '456) also discloses a gear oil lubricant comprised of a base oil a hydrocarbyl polysulfide, and a dihydrocarbyl (mono)thiophosphate ester. The thiophosphate amine salt is further disclosed as being the product of a dihydrocarbyl hydrogen phosphite, such as dialkyl hydrogen phosphite, sulfur, and one or more amines (page 6, lines 38-57). Since this production method is known to one of ordinary skill in the lubricant art, it would have been obvious for the dihydrocarbyl

(mono)thiophosphate ester of Perozzi to also be made from a dibutylhydrogen phosphite, sulfur, and an amine.

Allowable Subject Matter

8. Claims 2-4, and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy T. Lang whose telephone number is 571-272-9057. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anhtuan Nguyen can be reached on 571-272-4963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number: 10/756,711


Page 9

Art Unit: 3731

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

6/8/2007

ATL


(JACKIE) TAN-UYEN HO
PRIMARY EXAMINER

6/11/07